

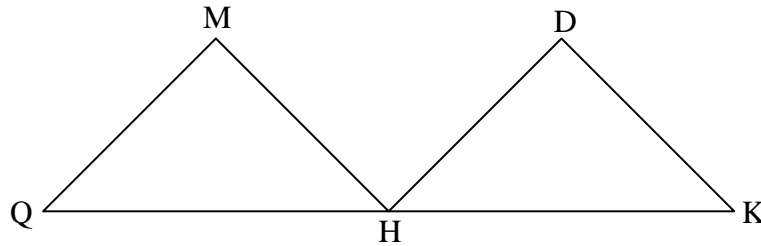
Practice with Congruent and Similar Triangles

1. Given: H is the midpoint of \overline{QK}

$$\overline{QM} \cong \overline{KD}$$

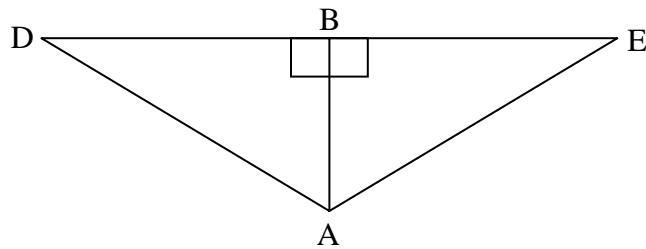
$$\overline{MH} \cong \overline{DH}$$

- Prove: $\triangle QHM \cong \triangle KHD$



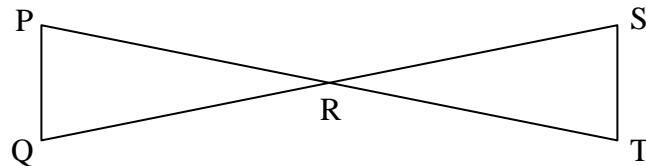
2. Given: $\overline{AB} \perp \overline{ED}$
B is the midpoint of segment \overline{ED}

- Prove: $\triangle ABD \cong \triangle ABE$



3. Given: R is the midpoint of both \overline{PT} and \overline{QS}

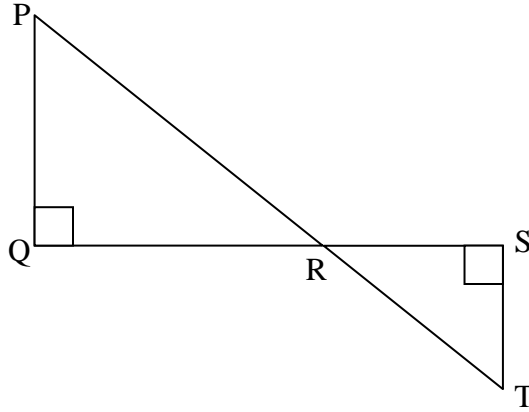
- Prove: $\triangle PRQ \cong \triangle TRS$



Practice with Congruent and Similar Triangles (Continued)

4. Given: $\triangle PQR$ and $\triangle TSR$ are right triangles

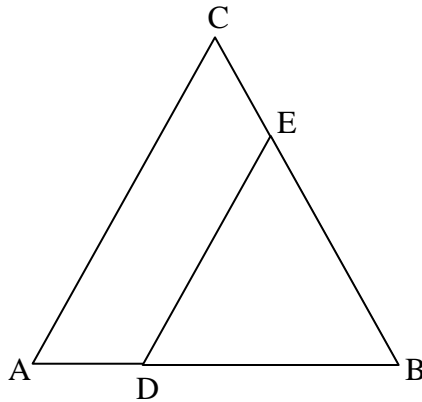
Prove: $\triangle PQR \sim \triangle TSR$



5. Given: $AB = CB = 9$ cm

$$DB = \frac{2}{3} AB \text{ and } EB = \frac{2}{3} CB$$

Prove: $\triangle ABC \sim \triangle DBE$



Answers:	1.	<u>Statement</u>	<u>Reason</u>
		1. H is the midpoint of \overline{QK}	1. Given
		2. $\overline{QH} \cong \overline{HK}$	2. Definition of midpoint
		3. $\overline{QM} \cong \overline{KD}$	3. Given
		4. $\overline{MH} \cong \overline{DH}$	4. Given
		5. $\triangle QHM \cong \triangle KHD$	5. Side-side-side triangle cong.
	2.	<u>Statement</u>	<u>Reason</u>
		1. $AB \perp ED$	1. Given
		2. $\angle DBA$ and $\angle EBA$ are right angles	2. Definition of perpendicular lines
		3. $\angle DBA \cong \angle EBA$	3. All right angles are cong.
		4. B is midpoint of \overline{ED}	4. Given
		5. $\overline{DB} = \overline{BE}$	5. Definition of midpoint
		6. $\overline{AB} = \overline{AB}$	6. Reflexive property
		7. $\triangle ABD \cong \triangle ABE$	7. Side-angle-side triangle cong.
	3.	<u>Statement</u>	<u>Reason</u>
		1. R is midpoint of \overline{PT} , \overline{QS}	1. Given
		2. $\overline{PR} \cong \overline{RT}$	2. Definition of midpoint
		3. $\overline{QR} \cong \overline{RS}$	3. Definition of midpoint
		4. $\angle PRQ \cong \angle SRT$	4. Vertical angles are congruent
		5. $\triangle PRQ \cong \triangle TRS$	5. Side-angle-side triangle cong.
	4.	<u>Statement</u>	<u>Reason</u>
		1. $\triangle PQR$ & $\triangle TSR$ are right triangles	1. Given
		2. $\angle PQR$ and $\angle TSR$ right angles	2. Definition of right triangles
		3. $\angle PQR \cong \angle TSR$	3. All right angles are congruent
		4. $\angle PRQ \cong \angle SRT$	4. Vertical angles are congruent
		5. $\triangle PQR \sim \triangle TSR$	5. Angle-angle similarity theorem
	5.	<u>Statement</u>	<u>Reason</u>
		1. $DB = \frac{2}{3} AB$	1. Given
		$EB = \frac{2}{3} CB$	
		2. $\angle B \cong \angle B$	2. Reflexive Property
		3. $\triangle ABC \sim \triangle DBE$	3. Side-angle-side similarity theorem